

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A process for producing a high-resolution printed surface pattern on a substrate comprising the steps of:
forming a microscopic surface structure on the substrate, said microscopic surface structure being defined by a plurality of grooves replicated in the surface of the substrate, said grooves having an orientation direction, a profile shape, a spatial frequency of more than 50 grooves/mm and a profile depth of less than 2 µm; and
applying an amount of wherein in the process a printing substance is applied to the substrate, in pattern form by means of a printing process, said printing substance forming a printed surface pattern on the substrate, said printed surface pattern having a line width,
wherein for fine structuring of the surface pattern prior to the application of the printing substance a microscopic surface structure with a plurality of grooves is replicated in the surface of the substrate and, wherein the fine structuring the line width of the printed surface pattern is determined by the respective locally applied application amount of printing substance applied and the respective local relief parameters of the microscopic surface structure, in particular orientation direction and profile shape of the grooves of the microscopic surface structure.
2. (Currently Amended) A process according to claim 1, wherein the line width fine structuring of the printed surface pattern is varied implemented by variations in the orientation direction of the grooves of the microscopic surface structure.
3. (Currently Amended) A process according to claim 1, wherein the line width fine structuring of the printed surface pattern is varied implemented by variations in the profile depth of the grooves of the microscopic surface structure.

4. (Currently Amended) A process according to claim 1, wherein the line width fine structuring of the surface pattern is varied implemented by variations in the profile shape of the grooves of the microscopic surface structure.

5. (Currently Amended) A process according to claim 1, wherein the amount of printing substance is applied to the substrate along a line having a longitudinal axis perpendicular to the line width, whereby the line width of a surface region of the surface pattern is determined by the choice of the angle between the longitudinal axis of the applied line of printing substance surface region and the orientation direction of the grooves associated portion of the microscopic surface structure.

6. (Previously Presented) A process according to claim 1, wherein the width of a surface region of the surface pattern is varied by the provision, in the surface region, of regions with a different orientation direction for the surface structure.

7. (Previously Presented) A process according to claim 6, wherein the width of the surface region of the surface pattern is varied by the provision, in the surface region, of at least two regions with the orientation directions of the surface structure being rotated relative to each other through 90 degrees.

8. (Previously Presented) A process according to claim 1, wherein the width of the surface region of the surface pattern is varied by the provision, in the surface region, of regions with a different profile shape and/or profile depth of the surface structure.

9. (Currently Amended) A process according to claim 1, wherein the grooves of the microscopic surface structure have centering of a surface region of the surface pattern is altered by an asymmetrical profile shape in the associated portion of the microscopic surface structure.

10. (Currently Amended) A process according to claim 5, wherein the line width of the surface pattern in at least one microscopic surface structure region is less than 50 μm .

11. (Currently Amended) A process according to claim 1, wherein the grooves of the microscopic surface structure form moiré patterns are produced by means of the fine structuring of adjacent surface regions by a variation in local relief parameters of the microscopic surface structure.

12. (Currently Amended) A process according to claim 1, wherein the grooves of the microscopic surface structure form a micro-script pattern is produced by means of the fine structuring by a variation in local relief parameters of the microscopic surface structure.

13. (Currently Amended) A process according to claim 1, wherein the amount of printing substance applied is defined by a layer thickness, a region in which the thickness of the printing substance layer varying varies in a pre-defined manner is produced by varying the profile depth of the grooves of the microscopic surface structure.

14. (Previously Presented) A process according to claim 13, wherein a high-refractive lacquer is used as the printing substance and that a lens body is produced by the variation in the profile depth of the grooves in the region.

15. (Currently Amended) A process according to claim 1, wherein the line width fine-structuring of the surface pattern is varied implemented by a variation in the relief parameters of the microscopic surface structure with a substantially constant application amount of printing substance per unit of surface area.

16. (Currently Amended) A process according to claim 1, wherein the microscopic surface structure has a spatial frequency of more than 50 grooves/mm, preferably from 100 to 1200 grooves/mm, and a profile depth of less than 2 μm , preferably from 0.2 to 1.0 μm .

Claims 17-24 (Canceled)